
Clinical Management of Cholera

CDC
Centers for Disease
Control and
Prevention

Cholera

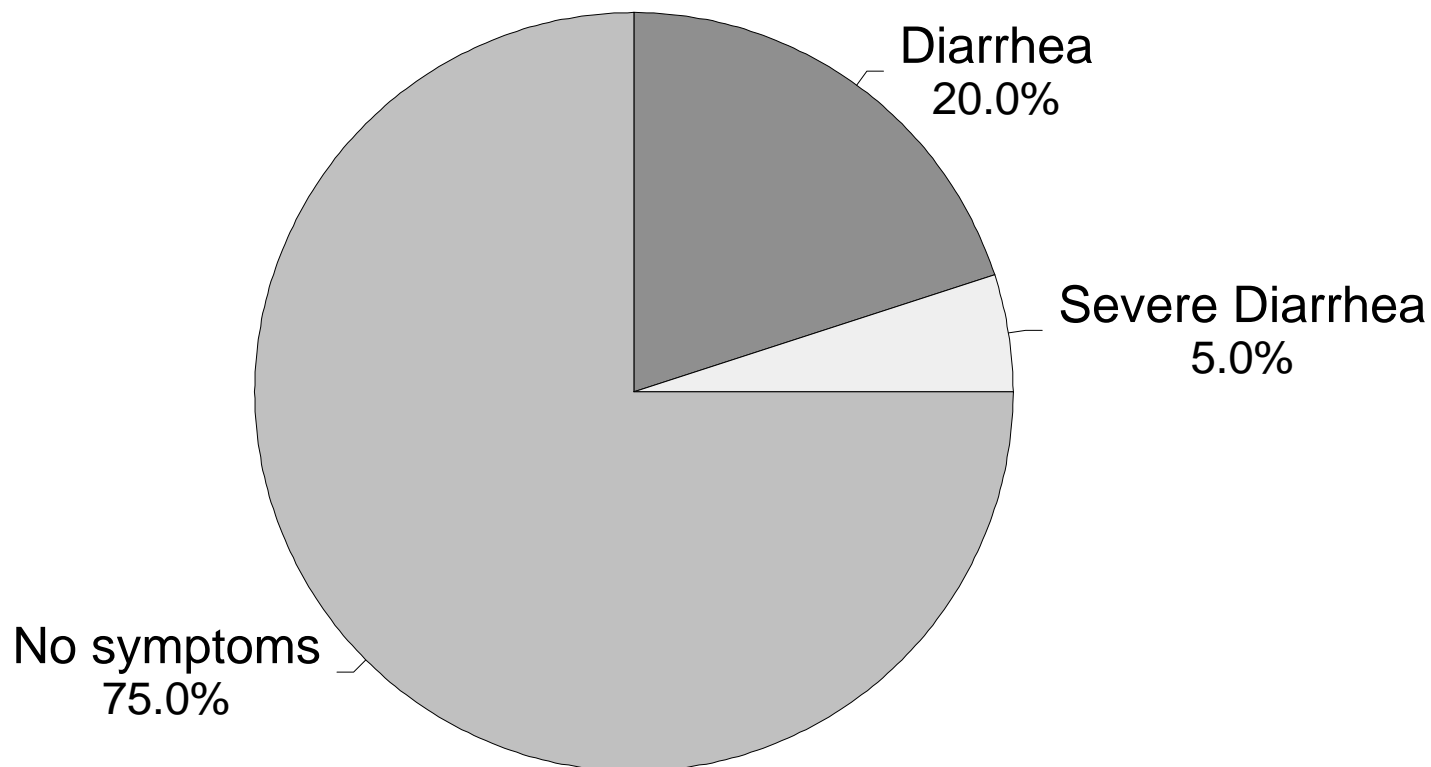
- **Most infections are mild**
- **Deaths are due to dehydration**
 - Rehydrate patients rapidly, using CDC guidelines
- **Case fatality rates can be:**
 - < 1% in a district that is prepared
 - as high as 50% in an unprepared district
- **Give antibiotics only to severely dehydrated patients**

Clinical Presentation of Cholera

- **Symptomatic cholera**
 - acute watery diarrhea
 - profuse, "rice water" stools
 - no fever, no abdominal cramps
 - vomiting and leg cramps common

- **Dehydration**
 - can lose up to 10% of body weight
 - fluid losses up to 1 liter / hour
 - must replace fluids and electrolytes to avoid hypovolemic shock, renal failure and death

Clinical Spectrum of Cholera



Cholera

- **Incubation period of 1 - 3 days**
- **Symptoms last 2 - 3 days**
- **Patients are infectious from onset of illness until few days after recovery**

Suspect cholera when:

- In an area where cholera is not endemic, a patient 5 years or older develops severe dehydration or dies from acute watery diarrhea
- In an area where there is an epidemic of cholera, or where cholera is endemic, a patient 5 years or older, develops acute watery diarrhea
- A case of cholera is confirmed when
 - *Vibrio cholerae* 01 or 0139 is isolated from any patient with diarrhea

Principles of Clinical Management

- **Goal is to rehydrate and replace electrolytes**
- **80-90% of cholera patients can be rehydrated with oral rehydration alone**
- **Severe dehydration requires IV therapy**
- **Ringer's Lactate is the best IV solution**
- **For severe dehydration, antibiotics reduce stool volume, duration of diarrhea and infectivity**

Steps in Management of Cholera

1. **Assess for dehydration**
2. **Rehydrate the patient & maintain hydration**
 - monitor frequently and reassess
 - replace ongoing fluid losses
3. **Antibiotic, only for severe dehydration**
4. **Feed the patient**
5. **Teach the patient and family**

Assess Degree of Dehydration

Assessment of the Diarrhea Patient for Dehydration			
1. LOOK AT CONDITION	Well, alert	*Restless, Irritable*	*Lethargic or unconscious; floppy*
EYES	Normal	Sunken	Very sunken and dry
TEARS	Present	Absent	Absent
MOUTH & TONGUE	Moist	Dry	Very dry
THIRST	Normal	*Thirsty, drinks eagerly*	*Drinks poorly or not able to drink*
2. FEEL SKIN PINCH	Goes back quickly	*Goes back slowly*	Goes back very slowly*
3. DECIDE	The patient has no signs of dehydration	If the patient has two or more signs, including at least one *sign* , there is some dehydration	If the patient has two or more signs, including at least one *sign* , there is severe dehydration

In adults and children older than 5 years, other ***signs*** for severe dehydration are ***absent radial pulse*** and ***low blood pressure***. The skin pinch may be less useful in patients with marasmus (severe wasting) or kwashiorkor (severe malnutrition with edema), or obese patients. Tears are a relevant sign only for infants or young children.

Rehydrate the Patient

For Severe Dehydration - Plan C

- **Start IV fluid immediately**
 - **Ringer's Lactate is best**
 - **Also give ORS if patient can drink**
 - **about 5 ml / kg / hour**
- **Monitor very frequently**
- **Completely reassess adults after 3 hours**
Completely reassess infants after 6 hours

Ringer's Lactate IV

Age	First give 30 ml/kg in	Then give 70 ml/kg in
Infants (<12 months)	1 hour	5 hours
1 year and over	30 minutes	2.5 hours

Monitor Very Frequently ***Severe Dehydration***

- **Monitor very frequently**
 - check patient's condition
 - check that the IV is running well
- **After the first 30 ml/kg have been given**
 - radial pulse should be strong
 - blood pressure should be normal
- **If pulse not strong, continue IV fluid rapidly**

Reassess the Patient

Severe Dehydration

- Reassess adults after 3 hours & infants after 6 hours
 - Use the "Assessment" chart
 - If you find:
 - severe dehydration (Plan C), repeat IV therapy
 - some dehydration (Plan B)
 - remove the IV
 - give ORS, as per table
 - no signs of dehydration (Plan A)
 - remove the IV
 - replace ongoing losses

Complications

■ Pulmonary Edema

- indicated by cough and difficult breathing
- occurs when too much IV fluid given
- more common when normal saline or half normal saline given without ORS solution

■ Renal Failure

- if too little IV fluid given
- if IV fluid given too slowly
- if patient becomes severely dehydrated a 2nd time

Give ORS for Some Dehydration

Amount to give in first 4 hours

Age	< 4 mo.	4-11 mo	12-23 mo	2-4 years	5-14 years	15 years and over
Weight in kg	< 5	5 - 7.9	8 - 10.9	11 - 15.9	16 - 29.9	30 and over
ml	200-400	400-600	600-800	800-1200	1200 - 2200	2200 - 4000

Maintain Hydration

For patients who presented with Plan B or C

Age	Amount of ORS after each loose stool
< 24 months	100 ml
2-9 years	200 ml
10 years and over	as much as wanted

ORS for Patients with No Dehydration

For patients who presented with Plan A

Age	Amount of ORS after each loose stool	Give enough ORS packets for:
< 24 months	50 - 100 ml	500 ml / day
2-9 years	100 - 200 ml	1 liter / day
10 years and over	as much as wanted	2 liters / day

Use of Drugs in Cholera

- Give an oral antibiotic to the patient who has severe dehydration
- Do not use any other drugs.
Do not use:
 - anti-emetics
 - anti-motility drugs
 - anti-diarrheal drugs

Antibiotic Treatment

for patients with severe dehydration

Antibiotic	Children	Adults
Doxycycline	---	300 mg
Tetracycline (4 times per day for 3 days)	12.5 mg/kg	500 mg
Trimethprim-sulfamethoxazole (twice a day for 3 days)	TMP 5 mg/kg and SMX 25 mg/kg	TMP 160 mg and SMX 800 mg
Furazolidone (4 times per day for 3 days)	1.25 mg/kg	100 mg
Erythromycin	10 mg/kg (3 times per day for 3 days)	250 mg (4 times per day for 4 days)

Discharge of Patients

- **Suspected cholera patients should remain at health facility until diarrhea and vomiting have stopped.**
- **Even after dehydration is corrected, monitor closely to replace ongoing losses.**

Tell the Patient to Return if...

- **increased number of watery stools**
- **eating or drinking poorly**
- **marked thirst**
- **repeated vomiting**
- **fever**
- **blood in stool**

Instructions for Patients and Families

- Normal diet as soon as vomiting stops
- Continue breast-feeding
- Return to health facility if needed
- Instructions on:
 - personal hygiene
 - food safety
 - safe drinking water
 - sanitation

Record Patient Information

- **name**
- **age**
- **sex**
- **address**
- **date**
- **diagnosis**
- **specimens obtained**
- **treatment**
- **outcome (lived, died, referred)**